



## DEFENSE INFORMATION SYSTEMS AGENCY

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IN REPLY  
REFER TO: Joint Interoperability Test Command (JTE)

### MEMORANDUM FOR DISTRIBUTION

**31 Jan 11**

SUBJECT: Extension of the Special Interoperability Test Certification of Veraz I-Gate 4000 Edge with Software Version C 2.8.2.3\_ES

References: (a) DOD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004  
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008  
(c) through (f), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. Veraz I-Gate 4000 Edge with Software Version C 2.8.2.3\_ES is hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Switched Network (DSN) as a Strategic and Tactical Network Element. Test discrepancies that remain open are discussed in the Interoperability Test Summary and have only minor operational impacts. The SUT is deployed with its mated pair, and both must be loaded with the same certified C 2.8.2.3\_ES software release in order to interoperate correctly. The SUT meets the critical interoperability requirements set forth in Reference (c), using test procedures derived from Reference (d). No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that affect interoperability, but no later than three years from the date of the original memorandum (13 August 2009).

3. The extension of this certification is based upon Desktop Review (DTR) 1. The original certification is based on interoperability testing conducted by JITC, comparison of the test data to the requirements in Reference (c), review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 4 through 29 May 2009 and documented in Reference (e). Review of the vendor's LoC was completed on 3 August 2009. IPv6 requirements were waived by the Office of the Assistant Secretary of Defense for Networks and Information Integration, and were not tested or evaluated. DSAWG granted accreditation on

11 August 2009 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (f). This DTR was requested to include Software Version C 2.8.2.3.2\_ES. This software update supports a Central Processing Unit (CPU) patch, which was developed solely to regulate the fan based on input voltage and temperature. This allows for the use of newer Sunon fans in the SUT (the original Delta fans were manufacturer discontinued). This patch is required to eliminate a faulty hardware alarm in the EDGE Fan Tray Module that was caused by differences in design, materials, weight, and shape of the Sunon fans with the Delta fans. The JITC determined there was no risk in approving this DTR because the addition of this software patch is for transparent operation of new Sunon fan in the SUT and has no impact on interoperability. Therefore, JITC approves this DTR. The DSAWG accreditation for this DTR was granted on 27 January 2011.

4. The overall interoperability status of the SUT is indicated in Table 1. The interfaces and associated Capability Requirements (CRs) and Feature Requirements (FRs) critical used to evaluate the interoperability status are listed in Table 2. The interoperability test status is based on the SUT's ability to meet:

- a. DSN services for Network and Applications specified in Reference (c).
- b. The overall system interoperability performance derived from test procedures listed in Reference (d).

**Table 1. SUT Interoperability Test Summary**

DSN Access Interfaces			
Interface & Signaling	Critical	Status	Remarks
T1 CAS (AMI/SF) DTMF, MFR1	No <sup>1</sup>	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, MFR1	No <sup>1</sup>	Certified	Met all CRs and FRs.
T1 PRI (ANSI T1.607/T1.619a)	No <sup>1</sup>	Certified	Met all CRs and FRs.
T1 SS7 (ANSI T1.619a)	No <sup>1</sup>	Certified	Met all CRs and FRs.
E1 CAS (HDB3) DTMF, MFR1, DP	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.
E1 ISDN PRI (ITU-T Q.955.3)	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.
E1 SS7 (ANSI T1.619a)	No <sup>1</sup> (Europe only)	Certified	Met all CRs and FRs.
DSN Transport Interfaces			
TRANSPORT LEVEL	Critical	Status	Remarks
E1 (HDB3) Proprietary	No <sup>2</sup>	Certified	Met all CRs and FRs.
T1 (B8ZS/ESF) Proprietary	No <sup>2</sup>	Certified	Met all CRs and FRs.
100 Mbps Ethernet	No <sup>2</sup>	Certified	Met all CRs and FRs.
Features And Capabilities			
Features And Capabilities	Critical	Status	Remarks
Synchronization	Yes	Certified	Met all CRs and FRs.
Network Management	Yes	Certified	Met all CRs and FRs.
Echo Cancellation	No	Certified	Met all CRs and FRs.
Security	Yes	Certified	See note 3.
<b>NOTES:</b> 1 The UCR does not stipulate a minimum Access interface requirement for a Strategic or Tactical Network Element. 2 The UCR does not stipulate a minimum Transport interface requirement Strategic or Tactical Network Element. 3 Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (f).			

**Table 1. SUT Interoperability Test Summary (continued)**

<b>LEGEND:</b>			
AMI	Alternate Mark Inversion	ITU-T	International Telecommunication Union – Telecommunication
ANSI	American National Standards Institute		Standardization Sector
B8ZS	Bipolar Eight Zero Substitution	Mbps	Megabits per second
CAS	Channel Associated Signaling	MFR1	Multi-Frequency Recommendation 1
CRs	Capability Requirements	MLPP	Multi-Level Precedence and Preemption
DISA	Defense Information Systems Agency	PRI	Primary Rate Interface
DP	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP
DSN	Defense Switched Network	SF	Super Frame
DSS1	Digital Subscriber Signaling 1	SS7	Signaling System 7
DTMF	Dual Tone Multi-Frequency	SUT	System Under Test
E1	European Basic Multiplex Rate (2.048 Mbps)	T1	Digital Transmission Link Level 1 (1.544 Mbps)
ESF	Extended Super Frame	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched
FRs	Feature Requirements		Bearer Service for DSS1
HDB3	High Density Bipolar 3	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
ISDN	Integrated Services Digital Network	UCR	Unified Capabilities Requirements

**Table 2. SUT Capability and Feature Interoperability Requirements**

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS (AMI/SF) DTMF, MFR1	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• DS1 Interface Characteristics (R)</li> <li>• E1 Interface Characteristics (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.2.4</li> <li>• UCR 5.2.12.5.5.1.2.5</li> </ul>
T1 CAS (B8ZS/ESF) DTMF, MFR1	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• MOS (R) (S-NE only)</li> <li>• MOS (R) (T-NE only)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 6.1.4.1</li> </ul>
T1 PRI (ANSI T1.607/T1.619a)	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• BERT (R) (S-NE only)</li> <li>• BERT (R) (T-NE only)</li> <li>• Secure Transmission (Voice and Data) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 6.1.4.1</li> </ul>
T1 SS7 (ANSI T1.619a)	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• Modem (R) (S-NE only)</li> <li>• Modem (R) (T-NE only)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 6.1.4.1</li> </ul>
E1 CAS (HDB3) DTMF, MFR1, DP	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• Facsimile (R)</li> <li>• Call Control Signals (includes MLPP) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1</li> </ul>
E1 ISDN PRI (ITU-T Q.955.3)	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• Delay (R)</li> <li>• Alarms</li> <li>• Congestion Control (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1.1</li> <li>• UCR 5.2.12.5.5.1.1.2</li> </ul>
E1 SS7 (ANSI T1.619a)	No <sup>1</sup>	<ul style="list-style-type: none"> <li>• Voice Compression (C)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1.3</li> </ul>

**Table 2. SUT Capability and Feature Interoperability Requirements (continued)**

<b>DSN Transport Interfaces</b>			
<b>Interface</b>	<b>Critical</b>	<b>Requirements Required or Conditional</b>	<b>References</b>
T1 (B8ZS/ESF) Proprietary	No <sup>2</sup>	<ul style="list-style-type: none"> <li>• DS1 Interface Characteristics (R)</li> <li>• E1 Interface Characteristics (R)</li> <li>• MOS (R) (S-NE only)</li> <li>• MOS (R) (T-NE only)</li> <li>• BERT (R) (S-NE only)</li> <li>• BERT (R) (T-NE only)</li> <li>• Secure Transmission (Voice and Data) (R)</li> <li>• Modem (R) (S-NE only)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.2.4</li> <li>• UCR 5.2.12.5.5.1.2.5</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 6.1.4.1</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 6.1.4.1</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1</li> </ul>
E1 (HDB3) Proprietary	No <sup>2</sup>	<ul style="list-style-type: none"> <li>• Modem (R) (T-NE only)</li> <li>• Facsimile (R)</li> <li>• Call Control Signals (includes MLPP) (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1</li> </ul>
100 Mbps Ethernet	No <sup>2</sup>	<ul style="list-style-type: none"> <li>• Congestion Control (R) (TDM interfaces only)</li> <li>• Congestion Control (C) (IP interface only)</li> <li>• Voice Compression (C)</li> <li>• Delay (R)</li> <li>• Alarms</li> <li>• Jitter (R) (IP interface only)</li> <li>• Packet Loss (R) (IP interface only)</li> <li>• IPv6</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.1.2</li> <li>• UCR 5.2.12.5.5.1.1.2.2</li> <li>• UCR 5.2.12.5.5.1.1.3</li> <li>• UCR 5.2.12.5.5.1.1</li> <li>• UCR 5.2.12.5.5.1.1.1</li> <li>• UCR 6.1.4.3</li> <li>• UCR 6.1.4.3</li> <li>• UCR 5.3.5</li> </ul>
<b>SUT Features And Capabilities</b>			
<b>Feature/Capability</b>	<b>Critical</b>	<b>Requirements Required or Conditional</b>	<b>References</b>
Synchronization	Yes	<ul style="list-style-type: none"> <li>• Timing (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.1.2.7</li> </ul>
Network Management	Yes	<ul style="list-style-type: none"> <li>• Management Option (R)</li> <li>Local Management (Front Panel and/or External Console) (C)</li> <li>ADIMSS (C)</li> <li>• Fault Management (C)</li> <li>• Loop Back Capability (C)</li> <li>• Operational Configuration Restoral (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.5.5.2.1</li> <li>• UCR 5.2.12.5.5.2.2</li> <li>• UCR 5.2.12.5.5.2.3</li> <li>• UCR 5.2.12.5.5.2.4</li> </ul>
Echo Cancellation	No	<ul style="list-style-type: none"> <li>• Echo Canceller Functionality</li> <li>• 2100-Hertz EC Disabling Tone Capability</li> <li>• Echo Canceller Hardware</li> <li>• Echo Canceller on PCM Circuits</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 5.2.12.1.5.1</li> <li>• UCR 5.2.12.1.5.2</li> <li>• UCR 5.2.12.1.5.3</li> <li>• UCR 5.2.12.1.5.4</li> </ul>
Security	Yes	<ul style="list-style-type: none"> <li>• IA/DIACAP (R)</li> </ul>	<ul style="list-style-type: none"> <li>• UCR 3.2.3</li> </ul>
<b>NOTES:</b> 1 The UCR does not stipulate a minimum required DSN access interfaces. It can be met with any one of the following interfaces: Analog, BRI, Proprietary, Serial, IP, T1, E1, DS3, or OC-3. 2 The UCR does not stipulate a minimum required DSN transport interface. It can be met with any one of the following interfaces: Proprietary, T1, E1, DS3, OC-3 OC-12, OC-48, OC-192, IP, DWDM, or Serial			

**Table 2. SUT Capability and Feature Interoperability Requirements (continued)**

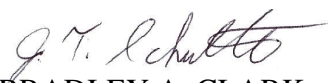
<b>LEGEND:</b>			
2W	2-Wire Analog	ITU-T	International Telecommunications Union –
ADIMSS	Advanced DSN Integrated Management Support System	LSSGR	Telecommunication Standardization Sector Local Access and Transport Area (LATA) Switching Systems Generic Requirements
AMI	Alternate Mark Inversion	Mbps	Megabits per second
ANSI	American National Standards Institute	MFR1	Multi-Frequency Recommendation 1
B8ZS	Bipolar with 8-Zero Substitution	MLPP	Multi-Level Precedence and Preemption
BERT	Bit Error Rate Test	MOS	Mean Opinion Score
BRI	Basic Rate Interface	NE	Network Element
C	Conditional	NI 1/2	National ISDN standard 1 or 2
CAS	Channel Associated Signaling	OC-12	Optical Carrier Level 12 (622 Mbps)
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	OC-192	Optical Carrier Level 192 (10 Gbps)
DP	Dial Pulse	OC-3	Optical Carrier Level 3 (155 Mbps)
DS1	Digital Signal Level 1	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DS3	Digital Signal Level 3	PRI	Primary Rate Interface
DSN	Defense Switched Network	Q.955.3	ISDN Signaling Standard for E1 MLPP
DSS1	Digital Subscriber Signaling 1	R	Required
DTMF	Dual Tone Multi-Frequency	SF	Single Frequency
DWDM	Dense Wavelength Division Multiplexing	SNE	Strategic Network Element
E1	European Basic Multiplex Rate (2.048 Mbps)	SS7	Signaling System 7
ESF	Extended Super Frame	SUT	System Under Test
Gbps	Gigabits per second	T1	Digital Transmission Link Level 1 (1.544 Mbps)
GR	Generic Requirement	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GR-506-CORE	LSSGR: Signaling for Analog Interfaces	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
HDB3	High Density Bipolar Three	TN	Tactical Network Element
IA	Information Assurance	UCR	Unified Capabilities Requirements
IPv6	Internet Protocol Version 6		
ISDN	Integrated Services Digital Network		

5. No detailed test report was developed, in accordance with the Program Manager's request. The JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

6. The JITC point of contact is Mr. Cary Hogan, DSN 879-2589, commercial (520) 538-2589, FAX DSN 879-4347, or e-mail to [cary.hogan@disa.mil](mailto:cary.hogan@disa.mil). The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0831503.

FOR THE COMMANDER:

Enclosure a/s

  
for **BRADLEY A. CLARK**  
Acting Chief  
Battlespace Communications Portfolio

JITC, Memo, JTE, Extension of the Special Interoperability Test Certification of Veraz I-Gate 4000 Edge with Software Version C 2.8.2.3\_ES

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Office of Assistant Secretary of Defense (NII)/DOD CIO

U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68

Defense Information Systems Agency, GS23

## **ADDITIONAL REFERENCES**

- (c) Defense Information Systems Agency (DISA), "Department of Defense Networks Unified Capabilities Requirements," 22 January 2009
- (d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of Veraz I-Gate 4000 Edge with Software Version C 2.8.2.3\_ES," 13 August 2009
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Veraz I-Gate 4000 Edge with Software Version C2.8.2.3\_ES (Tracking Number 0831503)," 11 August 2009